

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION STRATEGIES

3.0 INTRODUCTION

3.0.1 Purpose and Content of this Chapter

This purpose of this chapter is to describe existing environmental conditions in the areas that would be affected by the proposed high-speed train (HST) system and alternatives; evaluate potential environmental impacts associated with constructing and operating the HST alternative or the Modal Alternative; and present potential program-level mitigation strategies to avoid or reduce those impacts. The analysis presented in this chapter addresses the general effects of a program of actions that would make up the proposed statewide HST project. This chapter describes the general differences in potential environmental consequences between the No Project/No Action (No Project) Alternative, the Modal Alternative, and the HST Alternative. The analysis also identifies key differences between the potential impacts associated with the various HST station and alignment options, to support the selection of preferred alignment and station options for the system.

Many sources were used in the preparation of this document. References to these sources are provided in Chapter 12. In some cases to clarify a particular source, specific references are called out in the text.

3.0.2 How this Chapter is Organized

This chapter is organized into sections by resource topic. The resource topics are grouped as follows.

- Transportation and related topics (air quality; noise and vibration; energy; and electromagnetic interference).
- Human environment (land use and community impacts; parklands; farmlands and agriculture; aesthetics and visual resources; socioeconomics; utilities and public services; and hazardous materials/wastes).
- Cultural resources (archaeological resources, historic properties) and paleontological resources.
- Natural environment (geology and seismic hazards; hydrology and water resources; and biological resources, including wetlands).
- Section 4(f) and 6(f) resources (certain types of publicly owned parklands, recreation areas, wildlife/waterfowl refuges, and historic sites).

Each resource topic section contains the following information.

- Methods of evaluation.
- Regulatory requirements.
- Affected environment.
- Environmental consequences.
- Mitigation strategies.
- Subsequent analysis.

The methods of evaluation and regulatory requirements discussions for each resource topic describe the assumptions, approach for evaluation, and rating scheme used to identify potential impacts as *significant* (potentially requiring mitigation), and identify the relevant statutes and CEQA, NEPA, or regulatory agency guidelines relevant to future project approvals or decisions for that resource area. The methods of impact evaluation were developed with input from state and federal resource agencies. The agencies acknowledged that this is a planning-level EIR/EIS aimed at making broad decisions about whether to pursue a high-speed train as a means of intercity travel in California, and if pursued, to help determine the corridors and alignments to carry forward for project-level environmental evaluation. Key differences in potential impacts for each of the alternatives are described.

As described in Chapter 2, *Alternatives*, ridership for this system was estimated to vary between 42 million passengers on the low end and 68 million passengers on the high end (10 million riders would be long-distance commuters) for 2020. For this Program EIR/EIS, the higher ridership forecast of 58 million intercity trips, together with 10 million commute trips, provides a reasonable representation of total capacity and serves as a representative worst-case scenario for analyzing the potential environmental impacts from the physical and operational aspects of the system alternatives in 2020. This higher forecast is generally used as a basis for defining the system alternatives and is referred to hereafter as the *representative demand*. In some specific analyses (e.g., energy, air quality, and transportation), the high-end forecasts would result in potential benefits. In those cases additional analysis is included in this Program EIS/EIR to address the impacts associated with the lower ridership forecasts.

The affected environment discussions summarize the information that provides the basis for analysis of potential environmental impacts on each environmental resource. Information in the affected environment discussions is presented by study region. From north to south the five study regions are: Bay Area to Merced; Sacramento to Bakersfield; Bakersfield to Los Angeles; Los Angeles to San Diego via Inland Empire; and Los Angeles to San Diego via Orange County (LOSSAN). Because the proposed HST system would not be operational until the year 2020, the affected environment discussions describe both the existing conditions as of 2003 and, where appropriate and not overly speculative, the anticipated 2020 conditions that would pertain when the project becomes operational. For disciplines where projections of future changes in existing conditions would be overly speculative, the existing 2003 conditions were used as a proxy for the 2020 conditions. For some disciplines—such as transportation, energy, air quality, and land use—future conditions are routinely projected in adopted regional or local planning documents or are forecast by public agencies. In these cases, the existing conditions and the projected 2020 conditions were used as the basis for impact analysis. The technical studies prepared for each region and addressing each resource area provided key information for the preparation of the affected environment discussions.

The environmental consequences discussions describe the potential environmental impacts (both adverse and beneficial) of the Modal and HST Alternatives in comparison to the No Project Alternative and compared to each other. Each discussion begins by comparing existing conditions with 2020 No Project conditions to describe the consequences of No Project and how environmental conditions are expected to change during the timeframe required to bring the proposed HST system online. As described above, existing (2003) conditions were used as a proxy for 2020 No Project conditions where 2020 baseline information was unavailable, could not be projected, or would be overly speculative. Using 2020 No Project conditions as a basis for comparison, the analysis of impacts then addresses direct and indirect impacts for the proposed HST and Modal Alternatives, as well as potential cumulative impacts. Measures that already have been included as part of the proposed HST Alternative to reduce or avoid potential environmental impacts were incorporated into this analysis; examples include locating the alignment within an existing transportation corridor, and tunneling to avoid surface disruption in sensitive areas such as parklands and wildlife habitat areas. The impact analysis first compares alternatives on a system-wide basis and then compares alternatives regionally. In addition, the alignment and station options within segments of the HST Alternative are compared with one another.

The Draft Program EIR/EIS analysis shows differences in both adverse and beneficial potential environmental impacts from the No Project, Modal, and HST Alternatives at the system-wide level. For many of the environmental areas, the quantities presented represent areas within which potential impacts might occur. For example, the area of floodplains includes all floodplains within 100 feet (ft) (30.5 meters [m]) of either side of the centerline of the alignment considered. However, the right-of-way necessary for the improvements considered is much smaller (e.g., only 25 ft [7.6 m] on either side of centerline for HST). Therefore the magnitude of potential impacts reported is considerably larger than the actual impacts that would be expected from either the HST or Modal Alternative.

The mitigation strategies discussions describe potential mitigation approaches that can be identified at a program level for use to avoid, minimize, or reduce any potentially significant environmental impacts.

Finally, each resource topic section includes a subsequent analysis discussion summarizing directions for more detailed study during project-level environmental review and documentation should an action alternative be selected through the program environmental process.